| 13400 | EU IND: | OU EX INDE | INVARIAN X RESIDUES | HUM HUM IG | AN HU | AAN G | 3 4 AL OU | вот | x17115 | GĻ1 | B HUMAN IGM MEMB 'CL | 9 WAH | NIG : | eri : | 12 HUMAN IGD'CL | 13 HUMAN IGD MEMB 'CL | 14 HUM IGG3 | CL 0 | 94 H | 6 :7 ER FRO | le l Jon w | s |
|---|--|---|------------------------|--|--|--|--|--|---|-----|--|---|--|---------------------------------------|--|-----------------------------------|--|--|------|----------------|---|---------------------------------------|
| 366645 67.7AB 366666 6677777 777777 | 34434 446 47 4967-10 1941167 3444 47 4967-10 1955109 3 1955109 1955109 | 01123 44123 445 447 447 447 447 447 447 447 447 55 55 55 | PRO | ASI GLI ASI THI ILLE ARG VALE PRO PRO SER PRO | P AIR SEE AIR | SPACE AND | LA ALA LE ILE RO PRO RO PRO ER SER HE PHE | ASP GLN ASP THR ALA ILE ARG VALA PRO PRO SER PHE | ASP GLN ASP THR ALA ILE PHE PRO PRO SER PHE | | | GLN ALA PRO VAL LYS LEU SER LEU ASN LEU | GLN ALA PRC VALS LEU SER LEU ASSULLEU ALA SER SER | | ALA GLIN ALA PRO VALS LEU SERU ALA SER ASP | | GLY GLX | GL PR | , z | | STORY ARE SERVICE AND SERVICE | Neg 1911 k Jakto or |
| 378 378 380 382 382 384 386 388 3896 388 3990 3990 3990 4012 400 4012 404 | 7 890 12375 67890 12345 6789 5556 66666 666667 77777 7777 7777 833 33333 33333 3333 | 5 157890 :12345 67890 :12345 6 789 0 177777 7 779 0 177777 3 177777 3 17777 3 | CYS | A SELECTION OF SEL | SET YEER YEER YEER YEER YEER YEER YEER YE | A SEPREMENT LISTED RESULTS OF THE SEASON RES | LA ALA ELE SLEE ELE SLEE | ALA SER LIPE LEU LYSER LYSER LYSE LYSER LYSE LYSER LYSE LYSER LYSE | ALA SELECTION SELECTION SELECTION SELECTION SELECTION SELECTION SELECTION ASPIRAL | | | PRO I | PROFILE EUSTILE YERO NEU | | PRO PROLIA ALARAP LLEYSULE YEEROO NEUUU | | METRS STATE OF THE | MINISTER SERVICE SERVI | | | ARIST CONTROL OF THE | THIS SEASON STATE STATE STATES OF THE |
| 405 406 407 408 409 410 | 380 381 382 383 383 | 380 381 382 383 384 | TRP(.95) | ILE SER TRP | ILI SEI TRI THI ARG | R SE P TR R TH G AR | R SER P TRP R THR G ARG | THR ARG | ILE SER TRP THR ARG | | | GLU G | RP EU LU SP | | MET TRP LEU GLU ASP | | GLU TRP GLU SER | GLU TRP GLU SER | | | GLU TRP GLU SER | |
| 411 413 414 415 416 417 418 419 420 421 420 421 422 423 424 425 427 428 430 431 432 | 385 3867 3888 39933 3993 3993 3993 3993 3993 400 401 | 386 387 3889 3994 3994 3995 3997 3997 3999 400 401 | · ,, ÷ | \$\tau_{\text{\chi}}\$ | GLI ASSI GLI ALS THE ASSI THE ASSI SERVICE SERVICE ASSI ASSI ASSI ASSI ASSI ASSI ASSI ASS | AS GLI THIS SEI SEI SEI PRO | Y ASN J ASN | ASP GLY GLU ALA LYS THR HIHR HIHR ASN ILE SELU SELU SELU PRO | GLN | | HERECE C.S. | GLN GARAGEU VASN AARG AFFER SELV GERO PROPERO PERO PERO PERO PERO PERO PER | LNGU LINGUAS ANNERS HEAD ANNERS HEAD ANNERS HEAD AND AND ANNERS HEAD AND ANNERS HEAD AND ANNERS HEAD AND AND ANNERS HEAD AND AND AND AND AND AND AND AND AND A | | GIN GIN ARRU VASN TSER PALA PA | . ' | GLY GLNCGASN FRCU ASN TYRS THR THR PROOMET LEU ASP | ASN GLY GLN PRO GLN ASN TYR ASN THR THR PRO MET LEU ASP | | | SER GLY GLN GLN ASN TYR ASN THR THR PRO MET LEU ASP | |
| 432 433 4345 435 436 437 438 440 441 442 444 444 444 444 444 444 445 446 447 448 447 448 449 450 460 460 460 460 460 460 470 471 472 473 473 476 477 477 4775 4776 4776 4776 4776 47 | 4229 4229 44334 44334 44338 44389 4438 4434 4434 | 40067 40067 40067 40112 41115 4115 41 | | ASN SER GLYUGARGE THREE | ALAREA LESUUPPRANTA ALAREA LESUUPPRANTA ALAREA LESUUPPRANTA ALAREA LESUUPPRANTA ALAREA LESUUPPRANTA LEGUUPPRANTA LEGUUPPRA | A VALUALER LESGUS AS A RANNING GLIAS LESGUS AS A RANNING GLIAS LESGUS AS A RANNING GLIAGO A RANNING A RANN | ALA JETH TELEVISION OF THE TEL | ARHERA LYUAR ESUUPP PPI-E YUKREHR YRRAHRI REFURGE GUI-SIN REIRG GIS- | | | TTS VVL A A VPP A APP SSP PPP SSP PP S | HRE THE THE THE THE THE THE THE THE THE TH | RREPA PRIUG LOAGO ROLLN DARRER STARS TOLLN | TITE TO SVILA VPAAPP SPIG PAATTTI CVV | - HRREPA PREALUG ALGAROR ERO- IN ROLHRYR SALLERS JUPRIGIR TUUNA - RG-RU ULR | | GLYR PHEEL LEUR TSERS ARG PHER TSERS ARG P | | | | | |

| 4440678 090112 345567 890112 344567 827 827 827 827 827 827 827 827 827 82 | 3613365 36677 36677 36677 3677 3677 3773 3776 3777 3776 3777 3778 3777 3778 3779 3812 3813 3813 3813 3813 3813 3813 3813 |
|--|---|
| 0123 45 6789 01234 56789 0 1 23456 78 9 01234 56789 01234 56789 01 23 456 4444 4444 4444 4444 4444 4444 4444 | 341 341 344 344 344 345 347 349 355 355 355 355 356 366 366 366 366 377 3774 3778 3778 3778 3778 |
| 388 56 78890 12345 67 8890 12345 67 8890 12345 67 8400 401 2 4024 4024 4024 4024 4024 4024 | OU EX INDEX 3410 3412 343 3412 343 345 347 347 347 347 347 347 347 347 347 357 357 357 357 357 377 377 377 377 37 |
| GLUP TRPUSER | GLY GLY GLY GLY GLY GLN |
| GLU GER GLU GLU GE | EGIOM (cont'd 23 24 25 2 RUP BRU JIR C GLY GLN GLY GLN VAL THRU PRO PSER GLU HETT HETT LYS AGIN SER LEU THR LYS LEU THR PRO PSER GLU THR LYS AGIN GLN GLN GLN GLN GLN GLN GLN GLN GLN GL |
| GLU | GLY GLY GLY GLY GLY GLY GLY GLY GLY GLN GLN GNN PRO PRO PRO ANG ARG ARG GLU GLU GLU PRO PRO PRO CLU GLN GLN VAL VAL VAL THR |
| HIS GLU GLY LEU HIS ASN HYR GLN SER LEU SER LEU SER PRO GLY | |
| GLU | GLY GLY GLY GLN GRN GRN GRN GRN GRN GRN GRN GRN GRN GR |
| ARG ARG LYS LYS LEU LEU CLEU | 39 41 41 42 43 45 45 45 45 45 45 45 45 45 45 45 45 45 |

į

4

| | | INDEX | CH4-14 (IGG1) | CT | GORILLA IGA1'CL | 1GG, CT | HUMAN IGG2 CL | | | 1 52 IA PI | IG | MAN G4 CL | 54 VIN | HUMAN IGE CL | 56 HUMAN IGE 'CL' | CHIMP IGE 'CL | GUTAN IGE'CI | |
|-------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------|----------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|---------------------------------|--|
| 61 62 63 64 | 341 | 340 341 342 | GLY GLN PRO | GLY ASN THR | GLY ASN MET | GLY GLN PRO | GLY GLN PRO | GLY GLN PRO | GLY GLN PRO | GL | N G | LY | GLY | ASP SER ASN PRO | ASP SER ASN PRO | ASP SER ASN | ASP SER ASN | ASP ASP GLY C SER SER ASN ASP ASX I PRO PRO THR |
| 65 66 67 | 343 344 345 346 | 343 344 345 | ARG GLU | PHE | PHE | ARG GLU | ARG GLU | ARG GLU | ARG GLU | PR AR GL | G A U G | RO RG LU | PRO ARG GLU | ARG GLY | ARG GLY | PRO ARG GLY | PRO ARG GLY LEU | PRO PRO THE PARG ARG ARG PHE POLY GLY ARG ARG PRO |
| 67A 67A 67B 68 | 346 | 345 | PRO GLN | PRO | PRO GLU | PRO GLN | PRO GLN | GLN | PRO GLN | PR: | : : | RO | PRO | VAL | VAL SER | VAL | | |
| 9 | 348 | 347 348 | VAL TYR | VAL HIS LEU | VAL HIS LEU | VAL TYR | VAL TYR THR | VAL | VAL | VA. TY | L V R T | AL YR | VAL TYR | ALA TYR LEU | ALA TYR | SER ALA TYR LEU | SER ALA TYR | SER SER GLU G ALA ALA VAL V TYR TYR HIS H LEU LEU LEU I SER SER LEU I |
| 2 | 349 350 351 352 | 349 350 351 | THR LEU PRO | LEU PRO | PRO | THR LEU PRO | PRO | THR LEU PRO | | THI LEI PRO | 0 P | HR EU RO | THR LEU PRO | SER ARG | LEU SER ARG | ARG | LEU SER ARG | ARG ARG PRO P |
| 4 5 6 7 | 353 354 355 356 357 | 352 353 354 355 | PRO SER ARG ASP GLU | PRO PRO SER GLU GLU | PRO PRO SER GLU GLU | PRO SER GLN LYS | PRO SER ARG GLU GLU | PRO SER ARG GLU GLU | GLX | PRO SEI ARO GLI GLI | R S | RO ER LN LU LU | PRO SER GLN GLU GLU | PRO SER PRO PHE ASP | PRC SER PRC PHE ASP | PRO SER PRC PHE ASP | PRO SER PRO PHE ASP | PRC PRO PRO P SER SER PRO P PRO PRO SER S PHE PHE GLU G ASP ASP GLU G |
| 9 0 1 2 3 | 358 359 360 | 356 357 358 359 360 | LEU THR LYS | LEU ALA LEU ASN | LEU ALA LEU ASN | MET THR LYS | MET THR LYS | MET THR LYS | MET THR LYS | ME THI LY: | r m | ET HR YS | MET THR LYS | LEU PHE ILE ARG | LEU PHE ILE ARG | LEU PHE ILE ARG | LEU PHE ILE ARG | LEU LEU LEU L PHE PHE ALA A ILE ILE LEU L ARG ARG ASX A |
| 4 5 6 7 | 361 362 363 364 | 361 362 363 364 | ASN GLN VAL SER | GLU LEU VAL THR | GLU LEU VAL THR | ASN GLN VAL THR | ASN GLN VAL SER | ASN GLN VAL SER | ASN GLN VAL SER | ASI GLI VAI SEI | V. | SN LN AL ER | ASN GLN VAL SER | LYS SER PRO THR | LYS SER PRO | LYS SER PRO THR | LYS SER PRO THR | LYS LYS GLX G SER SER LEU L PRC PRO VAL V |
| é 9 0 | 365 366 367 | 365 366 367 | LEU THR CYS | LEU THR | LEU Thr | LEU THR | LEU THR | LEU | LEU | LEC | J L | EU HR | LEU | ILE THR | THR ILE THR | ILE THR | PRC THR | THE THE THE T ILE ILE LEU L THE THE THE T |
| 1 2 3 | 368 369 370 | 368 369 370 | LEU VAL LYS | LEU ALA ARG | LEU ALA ARG | LEU VAL LYS | CYS LEU VAL LYS | LEU VAL LYS | VAL | LEC VAI LYS | . v. | YS EU AL YS | LEU VAL LYS | CYS LEU VAL VAL | LEU VAL VAL | CYS LEU VAL VAL | CYS LEU VAL VAL | CYS CYS CYS C LEU LEU LEU L VAL VAL ALA A VAL VAL ARG A |
| 4 5 6 | 371 372 373 374 | 371 372 373 | GLY PHE TYR | GLY PHE SER | GLY PHE SER | GLY PHE TYR | GLY PHE TYR | GLY PHE | | GLY PHI TYI | (G | LY HE YR | GLY PHE TYR | ASP LEU ALA | ASP LEU ALA | ASP LEU ALA | ASP LEU ALA | ASP ASX GLY G LEU LEU PHE P ALA ALA SER S PRO PRO PRO P |
| 17 18 19 | 3/5 | 374 375 376 | PRO SER ASP | PRO LYS ASP | PRO LYS ASP | PRO SER ASP | PRO SER ASP | PRO SER | PRO SER | PRO SEI ASI | S | RO ER SP | PRO SER ASP | PRO SER | PRO SER | PRC SER LYS | PRO SER LYS | SER SER LYS L |
| 0 1 2 3 | 376 377 378 379 | 377 378 379 380 | ILE ALA VAL | VAL LEU VAL | VAL LEU VAL | THR VAL | ILE ALA VAL | ASP ILE ALA VAL | ILE ALA VAL | VAI | | LE LA AL | ALA VAL | LYS GLY THR VAL ASN | LYS . GLY THR VAL ASN | THR VAL ASN | GLY THR VAL ASN | GLY GLY VAL V THR THR LEU L VAL VAL VAL V ASN ASX |
| 5 6 7 8 | 380 381 382 383 | 381 382 383 384 | GLU TRP GLU SER | ARG TRP LEU | ARG TRP LEU | GLU TRP GLU SER | GLU TRP GLU SER | GLU | TRP | GLU TRI GLU | G | LU RP LU ER | GLU TRP GLX SER | LEU THR TRP SER ARG | LEU THR TRP SER ARG | LEU THR TRP SER ARG | LEU THR TRP SER ARG | THE THE ARG A TRP TRP TRP T SER SER LEU L ARG ARG |
| 0 1 2 | 384 385 | 385 386 | SER GLY | GLN GLY SER GLN | GLN GLY SER GLN | ASN GLY | ASN GLY | ASN GLY | ASN | | A: | SN LY | === | ALA SER | ALA SER | ALA SER | ALA SER | ALA ALA GLY G SER SER SER S |
| 3 4 5 6 7 | 386 387 388 389 | 387 388 389 390 | GLN PRO GLU ASN | GLU LEU PRO ARG GLU | GLU LEU PRO ARG GLU | GLN PRO GLU ASN | GLN PRO GLU ASN | GLN PRO GLU ASN | PRO GLU | | GI PI GI | LN RO LU SN | | GLY LYS PRO VAL | GLY LYS PRO VAL | GLY LYS PRO VAL | GLY LYS PRO VAL | GLY GLY LEU L LYS LYS PRO P PRO PRO ARG A VAL VAL GLU G |
| 8 9 0 1 2 | 390 391 392 393 394 | 391 392 393 394 395 | ASN TYR LYS THR THR | LYS TYR LEU THR TRP | LYS TYR LEU THR TRP | ASN TYR LYS THR THR | ASN TYR LYS THR THR | TYR LYS THR | ASN TYR LYS THR THR | LYS | T) | IR. | LYS THR THR | ASN HIS SER THR ARG | ASN HIS SER THR ARG | ASN HIS SER THR ARG | ASN HIS SER THR GLY | ASN ASX LYS L'HIS HIS HIS TYR T'SER SER LEU L'THR THR THR T'ARG ARG TRP T' |
| 3 4 5 | 395 396 397 | 396 397 398 | PRO PRO VAL | ALA SER ARG | ALA SER ARG | PRO PRO MET | PRO MET | | PRO MET | MET | P! V/ | ŔΟ | PRO PRO | LYS GLU GLU | LYS GLU GLU | LYS GLN GLU | LYS GLN GLU | LYS LYS ALA A GLU GLU SER SI GLU GLU ARG A |
| 6 7 8 | 398 399 400 | 399 400 401 | ASP SER | GLN GLU PRO | GLN GLU PRO | LEU ASP SER | | | LEU ASP SER | LEU ASP SER | AS | EU SP | ASP SER | LYS GLN ARG | GLU LYS GLN ARG | LYS GLN ARG | LYS GLN ARG | LYS LYS GLN G GLN GLN GLX G ARG ARG PRO P |
| 9 | 401 | 402 | ASP | SER GLN GLY THR | SER GLN GLY THR | ASN | ASP | ASP | ASP | ASP | | P. | ASP | ASN | ASN | ASN | ASN | ASN ASX GLN G |
| 3 4 5 6 7 | 402 403 404 405 406 | 403 404 405 406 407 | GLY SER PHE PHE LEU | THR THR PHE ALA VAL | THR THR PHE ALA VAL | GLY SER PHE PHE LEU | SER PHE PHE | GLY SER PHE PHE LEU | PHE | GLY SER PHE PHE LEU | PH | R IE IE | GLY SER PHE PHE LEU | GLY THR LEU THR VAL | GLY THR LEU THR VAL | GLY THR LEU THR VAL | GLY THR LEU THR VAL | GLY GLY THR TO THR THR THR TO LEU LEU TYR PO THR THR ALA AN VAL VAL VAL VA |
| 8 9 0 | 407 408 409 | 408 409 410 | TYR SER LYS | THR SER ILE | THR SER ILE | TYR SER LYS | TYR SER LYS | TYR SER LYS | TYR SER LYS | TYR SER LYS | TY SE AR | R | TYR SER ARG | THR SER THR | THR SER THR | THR SER THR | THR SER THR | THR THR THR TI SER SER SER SI THR THR ILE II |
| 3 | 410 411 412 | 411 412 413 | LEU THR VAL | LEU ARG VAL | ARG VAL | LEU THR VAL | THR VAL | LEU THR VAL | THR VAL | LEU | LE TH VA | IR | LEU THR VAL | PRO VAL | LEU PRO VAL | LEU PRO VAL | PRO VAL | LEU LEU LEU LEU LEU LEU PRO PRO ARG AI |
| 6 | 413 414 415 416 | 414 415 416 417 | ASP LYS SER ARG | ALA GLU ASP | ALA GLU ASP | ASP LYS SER ARG | SER | ASP LYS SER ARG | ASP Lys Ser | LYS | AS LY SE | P S R | ASP LYS SER | GLY THR ARG | GLY THR ARG | GLY THR ARG | GLY THR ARG | GLY GLY ALA AI THR THR ALA AI ARG ARG GLX GI |
| 8 | 417 418 | 418 419 | TRP GLN | TRP LYS | TRP LYS | TRP GLN | TRP | TRF GLN | TRP | ARG TRP GLN | TR GL | P N | ARG | ASF TRP ILE | ASP TRP ILE | ASP TRP ILE | ASP TRP ILE | TRP TRP TRP TR ILE ILE LYS LY |
| | | 420 421 | GLN GLY | LYS | LYS | GLN | GLN | GLN | GLN GLY | GLN GLY | | Ū | | GLU | GLU | GLU | GLU | GLU GLU LYS LY |
| 2 3 4 | 420 421 422 423 | 421 422 423 424 425 | ASN VAL PHE | ASP THR PHE | ASP THR PHE | ASN VAL PHE | ASN VAL PHE | ASN A | ASN VAL | ASN VAL PHE | AS VA PH | N L | | GLY GLU THR TYR | GLY GLU THR TYR | GLY GLU THR TYR | GLY GLU THR TYR | GLY GLY GLY GL GLU GLU GLU AS THR THR THR TH TYR TYR PHE PH |
| 6 | 425 426 | 426 427 | SER CYS SER | SER CYS MET | SER CYS MET | SER CYS SER | CYS | SFB (| CYS | SER CYS SER | SE CY SE | s | | GLN CYS ARG | GLN CYS ARG | GLN CYS ARG | GLN CYS ARG | CYS CYS CYS CY |
| Č | 428 429 | 428 429 430 | VAL MET HIS | GLY HIS | CLY HIS | VAL MET HIS | MET ! | HIS | MET HIS | VAL MET HIS | VA ME HI | L T! | MET | VAL THR HIS | VAL THR HIS | VAL THR HIS | VAL THR HIS | ARG ARG MET ME VAL VAL VAL VA THR THR GLY GL HIS HIS HIS HI |
| 3 | 431 432 | 431 432 433 434 | GLU ALA LEU | GLU ALA LEU | GLU ALA LEU | GLU GLY LEU | LEU : | GLU (ALA / | LEU LEU | GLY ALA LEU | GL AL LE | A U | | PRO HIS LEU | PRO HIS LEU | PRO HIS LEU | PRO HIS LEU | PRO PRO GLU GL HIS HIS ALA AL LEU LEU LEU LE |
| 5 6 | 434 435 | 435 436 | HIS ASN HIS | PRO LEU ALA | PRO LEU ALA | HIS ASN HIS | ASN HIS | HIS I | ASN HIS | HIS ASN HIS | HI AS | N S | | PRO ARG ALA | PRC ARG ALA | PRO ARG ALA | PRO ARG ALA | PRO PRO PRO PR ARG ARG LEU LE |
| 9 : | 437 438 | 437 438 439 | TYR THR GLN LYS | PHE THR GLN LYS | PHE THR GLN LYS | TYR THR GLN LYS | TYR : | TYR THR TOLK | TYR THR | TYR THR GLN | TH GL | R R 1 | THR SLN | MET | ALA LEU MET | VAL | LEU VAL | ALA ALA ALA AL LEU LEU PHE PH THR TH MET MET GLN GL |
| 1 2 | 440 | 440 441 | SER | THR ILE | THR ILE | SER LEU | SER S | SER S | ER EU | LYS SER LEU | LY: SE: LE: | R S | LYS SER LEU | ARG SER THR | ARG SER THR | ARG SER THR | ARG SER THR | ARG ARG LYS LY SER SER THR TH THR THR ILE IL |
| 4 | 443 | 442 443 | | ASP ARG | ASP ARG | SER LEU | SER S | SER S LEU I | ER EU | SER | SEI | R S | SER LEU | THR LYS | THR LYS | THR LYS | THR LYS | THR THR ASP AS |
| 6 | 445 | 444 445 446 | | LEU ALA GLY LYS | LEU. ALA GLY LYS | SER PRO GLY LYS | PRO S | PRO P | ER RO LY | SER PRO GLY | SEI LEI GL | U | ER EU ELY | THR SER | THR SER GLY | THR SER | THR SER | THR THR LEU LES |

| BEAVY | COMS | TANT CHAI | DIS CH3 R | EGION | (cont | ' d) | | | | | |
|-----------------------------------|---------------------------------|---------------------------------|--------------------------|-------------------------------|---------------------------------|---------------------------------|--------------------------|--|--|---------------------------------------|---|
| | | OU 6: INDEX HU | | 65 HUMAN IGA2 A2M(2) | IGM CL | IGM CL | IGM-b | 69 70 71 MUTANT HOPC HOPC 102 104E 104E 'CL HEMB 'CL | 72 73 74 75 76 77 HPC76 GB GAT50 IGD | 76 79 B1-8. MOUSE B DELTA: 1333 | 80 81 1993 1991 MEMB 'CL 'CL # |
| 361 | 341 | 340 | GLY | GLY | SER | SER | SER | SER | GLY ALA MET ALA | GLY | GLY |
| 361 362 363 364 365 | 342 343 344 | 340 341 342 | ASN THR | ASN THR PHE | PRO SER THR | PRO SER THR | PRO SER THR | PRO SER THR | MET Ala Pro | | ARG PRC LYS |
| 365 366 | 345 346 | 343 344 | PHE ARG | ARG | ASP | ASP | ASP | ASP | SER | ARG ALA | ALA PRO |
| 366 367 367A 367B | 346 | 345 | PRO | PRO | ILE | ILE | ILE | ILE | ASN | ALA GLN THR | PRO |
| 300 | 347 | 346 | GLU V a L | GLU VAL | LEU | LEU | LEU | LEU ASN | LEU | PRO 31N | GLN: |
| 369 370 371 372 373 | 348 349 350 | 347 348 349 | HIS | HIS LEU LEU | PHE | PHE | PHE | PHE THR | THR VAL | VAL TYR THR ILE PRC | VAL TYR THR :LE |
| 372 373 | 350 351 352 | 349 350 351 | LEU PRO | LEU PRO | THR ILE PRO | THR ILE PRO | THR ILE PRO | ILE PRO | ASN ILE LEU | ILE PRO | PRC |
| 374 375 | 353 354 355 356 357 | 352 353 | PRO PRO | PRO | PRO SER | PRO SER | PRO SER | PRO SER | THR THR | PRO PRO | PRC |
| 374 375 376 377 378 | 355 356 | 354 355 | SER GLU GLU | SER GLU GLU | PHE | PHE | PHE | PHE ALA | SER THR | ARG GLU | LYS GLU GLN |
| 379 | 33, | 356 357 358 | | | | | ASP | ASP | HIS | GLN | |
| 380 381 382 383 | 358 359 360 | 358 359 | LEU ALA LEU | ALA LEU | ASP ILE PHE LEU | ASP ILE PHE LEU | PHE | ILE PHE LEU | PRO GLU | MET SER | MET ALA LYS |
| 384 | 360 361 | 360 361 | ASN GLU | GLU | SER Lys | SER | SER Lys | SER Lys | MET SER | LYS | LYS |
| 385 386 387 | 361 362 363 | 362 363 | LEU VAL | LEU VAL | SER | LYS SER ALA | SER ALA | SER ALA | SER TRP | LYS LYS VAL SER | LYS VAL SER |
| 388 | 364 365 | 364 365 | THR LEU | THR | ASN | ASN | LEU | ASN LEU | LEU | LEU | LEC |
| 389 390 391 | 366 367 368 | 366 367 368 | THR CYS LEU | CYS LEU | THR CYS LEU VAL | THR CYS LEU | THR CYS LEU VAL | THR CYS LEU | LEU CYS GLU | THR CYS LEU VAL | THR CYS MET ILE |
| 391 392 393 | 368 369 370 | 369 370 | CYS LEU ALA ARG | ALA | SER | LEU VAL SER | SER | SER SER | GLU ' VAL SER | VAL THR | ILE THR |
| 394 395 396 | 371 372 | 371 372 373 | GLY PHE | - GLY | ASN LEU | ASN | ASN | ASN LEU | GLY PHE | ASN PHE | ASP PHE |
| 396 397 398 | 372 373 374 375 | 373 374 375 | SER PRO LYS | SER PRO LYS | ALA THR TYR | ALA THR TYR | ALA THR TYR | ALA THR TYR | PHE PRO GLU | PHE SER GLU | PHE PRO GLU |
| 199 | 376 377 | 376 | ACD | ASP VAL LEU | GLU | GLU | GLU | GLU | ASN | ALA ILE | ASP ILE |
| 400 401 402 | 378 379 | 377 378 | VAL LEU VAL | VAL | THR | THR | THR LEU | THR LEU | ILE HIS LEU | SER VAL | THR VAL |
| 404 | 200 | 379 380 | | | ASN | SER | ASN ILE | THR ILE | | | |
| 405 406 407 | 380 381 382 383 | 301 302 303 | ARG TRP LEU | ARG TRP LEU | SER TRP ALA | ILE SER TRP ALA | SER TRP ALA | SER TRP ALA | MET TRP LEU | GLU Trp Glu | GLU TRP GLN |
| 408 | 383 | 384 | | | SER | SER | SER | SER | GLŸ | ARG | TRP |
| 409 410 411 412 | 384 385 | 385 386 | GLN GLY SER | GLN GLY SER | GLN SER | GLN | GLN | GLN | VAL HIS | ASN | ASN |
| | 363 | 300 | GLN | GLN | 3LR | SER | SER | SER | SER Lys | GLY | GLY |
| 413 414 415 416 417 | 386 387 388 | 387 388 | GLU LEU PRO | GLU LEU PRO | GLY GLU PRO | GLY GLU PRO | GLY | GLY GLU | MET Lys Ser | GLU | GLN |
| 416 417 | 389 | 389 390 | ARĞ GLU | ARG GLU | LEU | PRO LEU | GLU PRO LEU | PRO LEU | THR ASN | GLU GLN | GLN PRO ALA GLU |
| 418 419 | 390 391 392 | 391 392 | LYS TYR LEU | LYS TYR LEU | GLU THR LYS | GLU | GLU THR | GLU THR LYS | PHE | ASP TYR | ASN TYR |
| 419 420 421 422 | 393 394 | 393 394 395 | THR | THR | ILE | LYS ILE LYS | LYS ILE LYS | ILE LYS | THR ALA ASN | LYS ASN THR | LYS ASN THR |
| 423 424 425 426 427 | 395 396 # | 396 397 | ALA SER | ALA SER | TTE | MET GLU | ILE MET GLU | ILE | PRO THR | PRO PRO | GLN PRO |
| 425 426 427 | 397 398 399 | 398 399 - 400 | ARG GLN GLU | ARG GLN GLU | MET GLU SER HIS | SER HIS | GLU SER HIS | MET GLU SER HIS | ALA GLN | ILE . | , ILE, |
| 428 . | 400 | 401 | PRO SER | PRO SER | PRO | PRO | PRO | PRO | PRO GLY | ASP SER | ASN THR |
| 428 . 429 430 431 432 | 401 | 402 | GLN GLY | GLN GLY · | ASN | ASN | ASN | ASN | | ASP | ASN |
| 433 | 402 403 | 403 | THR THR | THR | GLY | GLY | GLY | GLY THR | GLY | GLY | GLY |
| 433 434 435 436 | 404 405 | 404 405 406 | THR PHE ALA | THR TYR ALA | THR PHE SER | THR PHE SER | THR PHE SER | THR PHE SER | THR PHE GLN | THR TYR PHE | SER Tyr Phe |
| 437 | 406 407 | 407 408 | VAL THR | THR | ALA | ALA | ALA | ALA LYS | THR | LEU TYR | VAL |
| 438 439 440 441 442 | 408 409 410 | 409 410 411 | SER ILE LEU | SER ILE LEU | LYS GLY VAL ALA | LYS GLY VAL ALA SER | LYS GLY VAL ALA | GLY VAL ALA | SER VAL | SER LYS | TYR SER Lys |
| 442 | 411 | 412 413 | ARG | ARG | SER | SER | SER | SER | LEC ARG | THR | ASN |
| 443 444 445 446 447 | 413 414 415 | 414 415 | VAL ALA ALA GLU | VAL ALA ALA GLU | VAL CYS VAL GLU | VAL CYS VAL | VAL CYS VAL | VAL CYS VAL | LEU PRO VAL | VAL ASP THR | VAL GLN LYS |
| 446 | 416 | 416 | ASP | ASP | ASP | ASP | ASP | VAL GLU ASP | ALA LEU | ASP SER | SER ASN |
| 448 449 | 417 418 | 418 419 | TRP LYS | TRP LYS | ASN | TP.P ASN | TRP ASN | TRP ASN | SER SER | TRP LEU | TRP GLU |
| 450 | 419 | 420 | LYS | LYS | ASN | | | ASN | SER | GLN | ALA |
| 451 452 453 454 455 | 420 421 422 423 424 | 421 422 423 424 425 | GLY ASP THR | GLY | ARG LYS GLU PHE VAL | ARG LYS | ARG LYS GLU PHE | ARG LYS GLU | LEU ASP | Grā Grā | GLY ASN |
| 453 454 455 | 422 423 424 | 423 424 425 | THR PHE SER | THR PHE SER | PHE | ARG LYS GLU PHE VAL | GLU PHE VAL | GLU PHE VAL | THR TYR | PHE | THR PHE |
| 456 457 | 425 426 427 | 426 427 | CYS | | CYS | CYS | CYS | CYS THR | THR CYS VAL | THR CYS | THR CYS |
| 456 457 459 459 460 | 427 428 429 | 426 427 428 429 | VAL GLY | U.I | CYS THR VAL THR | THR VAL THR | THR | VAL THR | VAL GLU | SER VAL VAL | SER VAL LEU |
| 461 | 429 430 431 | 430 431 | HIS GLU | GLU | ARG | ARG | HIS ARG | HIS ARG ARG | HĪŠ GLU | HIS GLU | RIS GLU |
| 461 462 463 464 465 | 431 432 433 | 431 432 433 434 | GLU ALA LEU PRO | ALA LEU PRO | ASP LEU PRO | ASP LEU PRO | ASP LEU PRO | ASP ASP LEU LEU | ALA SER LYS | ALA LEU HIS | GLY LEU HIS |
| 465 466 | 434 | 435 | LEU ALA | LEU | SER | SER | SER | SER SER | THR | ASN | ASN |
| 467 468 | 436 437 | 436 437 | PHE THR | | | | PRO GLN | GLN GLN | LYS Leu Asn | HIS HIS THR | HIS HIS THR |
| 170 | 438 439 | 436 439 | GLN LYS | | | | LYS | LYS LYS | ALA | LYS | ĞLÜ LYS |
| 472 | 440 441 | 440 441 | THR ILE | | ILE | PHE | PHE | PHE PHE ILE ILE | SER Lys | ASN LEU | SER LEU |
| 473 474 | 442 443 | 442 443 | ASP ARG | ASP ARG | LYS | SER Lys | SER LYS | SER SER LYS LYS | SER LEU | SER SER LEU ARG | SER HIS |
| 475 | 444 445 446 | 444 445 446 | LEU ALA GLY | MET ALA | PRO ASN | PRO | PRC ASN | PRO PRO ASN ASN | ALA YLE SER | ALA SER | SER |
| 78 | 440 | 740 | LYS | GLY LYS | | | | | SER GLY | ILE PRO SER GLY GLY LYS | PRO GLY LYS |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

691

| HEAV | Y COMS | TANT C | HAIMS CH | REGION | (cont'd) | | | • | | • | | | | | | | | |
|--|--|--|---|---|---|--|--|---|----------------------------|----------------------|---|---|--|----------------------------|--|--|---|----|
| | EU INDE | OU K INDEX | IGG1 HOPC MEMB 21 | 84 85 IF2 ICR 'CL 11.19 | .3 (A) (CL | 87 IGG21 (A) 'CL' | IGG2I | 89 IGG2B MEMB | 90 MPC 11 | 10.1 | 92 1GG2A (A) 'CL | 93 94 17/9 IGG CL (B) | 95 A 1GG2/ (B) | 96 IGGZA MEMB 'CL | 97 MOPC 173 | 98 99 CBPC IG | A IGA | |
| 361 362 363 364 365 366 367 367 367A 367B | 341 342 343 344 345 346 | 340 341 342 343 344 345 | GLY LYS PRO ARG ALA PRO | GLY SER VAL | GLY LEU VAL ARG ALA PRO | GLY LEU VAL ARG ALA PRC | GLY LEU VAL ARG ALA PRO | | GLY | | SER VAL ARG ALA PRO | GLY PRO VAL ARG ALA PRO | PRO VAL ARG | | SER VAL ARG PRO | VAL TH ARG PH ALA PR PRO PR | VA: N ASN E THR E PHE O PRO | , |
| 368 369 370 371 372 373 374 375 376 377 | 34 490 112 345557 33555 555557 | 346 347 348 349 350 351 352 353 | GLN VAL TYR THR ILE PRO PRO LYS GLU GUN | | GLN VAL TYR THR LEU PRO PRO PRO PRO | GLN VAL TYR THR LEU PRO PRO PRO | GLN VAL TYR ILE LEU PRO PRO PRO | | | | VAL TYR VAL LEU PRO PRO PRO GLU | GLN VAL TYR VAL LEU PRO PRO ALA | VAL TYR VAL LEU PRO PRO PRO | | GLN VAL TYR VAL LEU PRO PRO PRO GLX GLX | GLN GL VAL VA TYR HI VAL LE LEU LE PRO PR PRO PR PRO PR ALA SE GLU GL | VAL HIS U LEU U LEU O PRO PRO PRO | |
| 379 380 381 382 383 384 385 386 387 | 3589 3599 3612 3633 3645 | 356 357 359 360 362 363 364 | MET ALA LYS ASP LYS VAL SER | | GLU GLN SER ARG LYS ASP VAL SER LEU | GLU GLN LEU SER ARG LYS ASP VAL SER LEU | GLU GLN LEU SER ARG LYS. ASP VAL SER | | | | GLU GLU MET THR LYS LYS GLN VAL THR | GLU GLU MET THR LYS LYS GLU PHE SER | GLU MET THR LYS LYS GLU PHE SER | | MET THR LYS LYS GLU VAL THR | GLU GL GLU GL MET AL THR LE LYS AS LYS AS LYS LE GLU LE PHE LE SER SE | GLU GLU LEU ALA LEU ASN GLU LEU LEU LEU LEU | |
| 368 389 3991 3991 3993 3995 3996 3997 | 366 367 368 370 371 3773 374 | 365 367 369 370 371 373 374 | LEU THR CYS MET ILE THR ASP PHE PHE PRO | PRO | THR CYS LEU VAL VAL GLY PHE ASN PRO | THR CYS LEU VAL VAL GLY PHE ASN PRO | THR CYS LEU VAL VAL GLY PHE ASN PRO | | | | THR CYS MET VAL THR ASP PHE MET PRO | LEU THR CYS MET ILE THR GLY PHE LEU PRO | THR CYS MET ILE THR GLY PHE LEU PRO | *. | THR CYS MET VAL THR ASN PHE MET PRO | THR THE CYS CY: MET LET ILE VALUE AND CYS CY: MET LET ILE VALUE AND CYS CYS ALLE PRO | THR CYS LEU VAL ARG | |
| 398 399 400 401 402 403 404 | 375 376 377 378 379 | 375 376 377 378 379 380 | GLU ASP ILE THR VAL | GLU ASP ILE TYR VAL | ASP ILE SER VAL | ASP ILE SER VAL | ASP ILE SER VAL | ٠, ٠ | | | ASP ILE TYR VAL | ALA GLU ILE ALA VAL | ALA GLU | | GLU ASP ILE TYR VAL | GLU GLU ILE VAI ALA LET VAL VAI | GLU- VAL LEU | |
| 405 406 407 408 409 410 | 380 381 382 383 | 381 382 383 384 395 | GLU TRP GLN SER | GLU TRP THR ASN | GLU TRP THR SER | GLU TRP THR SER | GLU TRP THR SER | | | • | GLU TRP THR ASN | ASP TRP THR SER | ASP TRP THR SER | | GLU TRP THR ASN | GLU ARC TRP TRE THR LEU SER HIS | HIS | |
| 411 412 413 414 | 384 385 | 386 | GLY | GLY LYS | GLY | GLY | GLY HIS | | | | ASN GLY | ASN GLY | ASN GLY | | ASN GLY | ASN GLY GLY ASN GLU | GLU GLU | |
| 415 416 417 418 419 420 421 | 386 387 388 389 390 391 392 393 | 387 389 390 391 392 393 | ALA PRO GLU ASN TYR LYS ASN | THR GLU LEU ASM TYR LYS ASN | THR GLU GLU ASN TYR LYS ASP | THR GLU GLU ASN TYR LYS ASP | THR GLU GLU ASN TYR LYS ASP | | | | LYS THR GLU LEU ASN TYR LYS ASN | ARG THR GLU GLN ASN TYR LYS ASN | ARG THR GLU GLN ASN TYR LYS ASN | | LYS THR GLU LEU ASN TYR LYS ASN | ARG LEU THR SER GLU PRO GLN GLU ASN SER TYR TYR LYS LEU ASN VAL | . SER | |
| 422 423 424 425 426 427 428 | 394 395 396 397 398 399 | 395 396 397 398 399 400 | THR GLN PRO ILE MET ASP | THR GLU PRO VAL LEU ASP SER. | THR ALA PRO VAL LEU ASP | THR ALA PRO VAL LEU ASP SER | THR ALA PRO VAL LEU ASP | * \$ | | 7 | THR GLU PRO VAL LEU ASP SER | THR ALA THR VAL LEU ASP SER | THR ALA THR VAL LEU ASP | | THR GLN PRO VAL LEU ASP | THR PHE ALA GLU THR PRO VAL LEU LEU LYS ASP GLU SER PRO | PHE GLU PRO LEU LYS GLU | 'n |
| 429 3 430 431 432 | 401 | 402 | ASP | ASP | ASP | ASP | ASP | | | | ASP | ASP | ASP | •. | ASP | ASP GLY | GLY GLY ALA | |
| 433 434 435 436 437 439 440 | 402 403 404 405 406 407 408 | 403 404 405 406 407 408 409 | GLY SER TYR PHE VAL TYR SER | TYR | GLY SER TYR PHE ILE TYR SER | GLY SER TYR PHE ILE TYR SER | GLY SER TYR PHE ILE TYR SER | | | i .1 | GLY SER TYR PHE MET TYR SER | GLY SER TYR PHE MET TYR SER | GLY SER TYR PHE MET TYR | | GLY SER TYR PHE MET | GLY THR SER THR TYR TYR PHE LEU MET VAL | THR THR TYR LEU VAL | |
| 442 | 409 410 411 412 413 | 410 411 412 413 | LYS LEU ASN VAL GLN LYS | LYS LEU VAL | LYS LEU ASN MET | SER LYS LEU ASN MET | SER LYS LEU ASP | | | ; | LYS LEU ARG VAL | LYS LEU ARG VAL | SER LYS LEU ARG VAL | | SER LYS LEU ARG VAL | SER SER LYS VAL LEU LEU ARG ARG VAL VAL | SER VAL LEU ARG VAL | |
| 444 445 446 447 448 449 | 414 415 416 417 418 | 414 415 416 417 418 | ASN TRP | GLU LYS LYS ASN | LYS THR SER LYS TRP | LYS THR SER LYS TRP | LYS THR SER LYS TRP | 1 | YS CHR ER YS | ļ | GLU LYS LYS ASN TRP | GLN LYS SER THR TRP | GLN LYS SER THR TRP | | ASN | VAL VAL GLN SER LYS ALA SER GLU THR THR | SER ALA GLU THR TRP | |
| 450 451 | 419 | 419 420 421 | GLU ALA GLY | GLU | GLU LYS THR | LYS THR | LYS THR | i | YS HR | - | /AL SLU ARG | GLN ARG | ARG | | GLU | TRP TRP GLU LYS | LYS | |
| 452 453 454 455 | 421 422 423 424 | 422 423 424 425 | ASN THR PHE THR | ASN TYR | ASP SER PHE SER | ASP SER PHE SER | ASP SER PHE SER | S P S | SP ER HE ER | A S T | ASN ER TYR ER | GLY SER LEU PHE ALA | GLY SER LEU PHE ALA | : | arg Asn Ser Tyr Ser | GLY GLY SER ASP LEU GLN PHE TYR ALA SER | GLY ASP GLN TYR SER | |
| 456 457 458 459 460 | 425 426 427 428 429 | 426 427 428 429 430 | CYS SER VAL LEU HIS | VAL VAL | CYS ASN VAL ARG HIS | CYS ASN VAL ARG HIS | CYS ASN VAL ARG HIS | A V A H | YS SN AL RG | S V | YS ER AL AL | CYS SER VAL VAL HIS | CYS SER VAL VAL HIS | į | CYS SER VAL VAL | CYS CYS SER MET VAL VAL VAL GLY HIS HIS | CYS MET VAL GLY HIS | |
| 461 462 463 464 465 | 430 431 432 433 434 | 431 432 433 434 435 | GLU GLY LEU I HIS H ASN J | iis | GLU GLY LEU LYS ASN | GLU GLY LEU LYS ASN | GLU GLY LEU LYS ASN | L | LU LY EU YS SN | G L H | LU LY EU IS | GLU VAL LEU HIS ASN | GLU VAL LEU HIS ASN | 9 | GLN GLY LEU HIS | GLU GLU GLY ALA LEU LEU HIS PRO ASN MET | GLU ALA LEU PRO MET | |
| 466 467 468 469 470 | 435 436 437 438 439 | 436 437 438 439 | HIS F HIS F THR T GLU G LYS I | HIS HR | TYR TYR LEU LYS LYS | TYR TYR LEU LYS LYS | TYR TYR LEU LYS LYS | T L L | YR YR EU YS | H T T | IS IS HR HR | HIS LEU THR THR | HIS LEU THR THR | : | | HIS ASM LEU PHE IHR THR IHR GLN LYS LYS | ASN PHE THR GLN | |
| 471 472 473 474 | 440 441 442 443 | 440 441 442 443 | SER S LEU I SER S HIS H | er Eu | THR ILE SER | THR ILE SER | THR ILE SER | I S | YS HR LE ER | S P Si | ys Er He Er | LYS THR ILE SER | LYS THR ILE SER | Š | HE : | LYS LYS THR THR ILE ILE SER ASP | LYS THR ILE ASP | |
| 474 475 476 477 478 | 444 445 446 | 444 445 446 | | ER RO | ARG SER PRO GLY LYS | ARG SER PRO GLY LYS | ARG SER PRO GLY LYS | A. Si Pi | RG ER RO LY | A) Ti Pi G) | RG HR RO LY YS | ARG SER LEU GLY LYS | ARG SER LEU GLY LYS | A T P | HR S | SER LEU SER LEU SEU SER SLY GLY | ASP ARG LEU SER GLY LYS | |

, 692

| | EU | OU | 101 MOPC 47A | 102 MOPC 315 | 103 MOPC 511 | 104 IGE CL | IGE CL | IGE a | IGE b | 108 IGE MEMB | 109 IGA MEMB 'CL | 110 RAT IGM 'CL | 111 RAT IGD 'CL | 112 IR- 731 | RAT IGGZC | RAT IGG2a | 115 RAT IGG1 'CL | 116 RAT IGG2b | RAT IGA | RAT IGE | IRS FRS | 120 IR- 162 , CL | PM3 | PM |
|--------------------------|---------------------------------|--------------------------|--------------------|--------------------|--------------------|--------------------------|-------------------|---------------------|--------------------------|--------------------|---------------------------|--------------------------|--------------------------|-------------------|---------------------|--------------------------|---------------------------|--------------------------|---------------------------------|---------------------------------|--------------------------|---------------------------------|-------------------|----|
| 361 362 | 341 | 340 | === | | VAL | ASP HIS GLU | ASP HIS GLU | ASP HIS GLU | ASP HIS GLU | | • | | ALLA MET | ALA VAL | GLY | GLY | GLY | GLY | GLU | ASP | ASP | ASP | THE | |
| 363 364 365 | 342 343 344 | 341 342 343 | === | | THR PHE | PRO ARG | PRO ARG | PRO ARG | PRO ARG | | | | PRO | PRO | LYS | THR | ARS | LEU | | | | ASP GLU PRO ARG | | |
| 366 367 | 345 346 | 344 345 | | | PRO | ALA GLY | GLY | GLY | GLY VAL | | | | SER | SER | ALA ARG THR | PRO ARG GLY | THR GLN VAL PRO | VAL ARS LYS | PRO | GLY VAL | GLY VAL | GLY VAL | ST. | |
| 367A 367B 368 | 347 | 346 | | | | ILE | ILE | ILE | ILE | | | | LEU | | GLN | PRO GLN | n.5 | GLN | GLN | | | ILE | | |
| 369 370 371 | 348 349 350 | 347 348 349 | | | VAL HIS LEU | THR TYR LEU | THR TYR LEU | THR TYR LEU | THR TYR LEU ILE | | | | ASN VAL ASN | ASN VAL ASN | VAL TYR THR | TYR THR | VAL TYR THR | VAL TYR VAL | VAL HIS LEU | THR TYR LEU ILE PRO | THR TYR LEU ILE | THR TYR LEU ILE | PHE | |
| 372 373 | 351 352 | 350 351 | | | PRO | PRO | PRC | PRO | PRO | | | | ASN ILE LEU | | PRO | MET | SER | WAT MET GLY | PRO | PRO | PRO | PRO | ALA | |
| 374 375 376 | 353 354 355 356 357 | 352 353 | | | PRO | SER | PRO SER PRO | PRO - SER PRO | PRO SER PRO LEU | | | | PHE | THR | PRO | PRC | THR | PRO | FR2 PR2 | SER PRO | SER FRC | PRO SER PRC LEU | SER | |
| 377 378 | 35€ | 354 355 356 | | | SER GLU GLU | ASP | ASP | ASP | ASP | | | | THR HIS | HIS | ARG | LYS | LYS | THR | 310 | ASP | ASF | ASP | ALA ASP | |
| 379 380 381 | 358 359 | 357 358 359 | | | LEU | LEU TYR GLN | LEU TYR GLN | LEU TYR GLN | LEU TYR GLN | | | | HIS GLN | HIS | GLN MET SER | GLU MET THR | GLU GLU MET THR | GLU GLN LEU THR | GLU ALA LEU | TYR GLU | LEU | LEU TYR GLU | THR PHE LEV | |
| 382 383 384 | 36C | 360 361 | | | ASN | ASN | ASN GLY | ASN | ASN | | | | MEI | VAL | LYS | GLN SER | GLN | GLN | ASN | ASN. | A5% | ASN | SEE | |
| 385 386 387 | 362 363 364 | 362 363 364 | | | LEU LEU SER | PRO | PRO LYS LEU | PRO LYS | PRO LYS | | | | SER SER TRP | | LYS VAL SER | GLN VAL SER | GLU VAL SER ILE | THR VAL SER LEU | GLU LEC VAL SER LEU | THR PRO LYS | THR PRO LYS | GLY THR PRO LYS LEU | SER ALA ARG | |
| 388 389 | 365 366 | 365 366 | | | LEU THR | THR | THR | THR | THR | | | | MET CYS | | THR | THR | THR | THR | THR | THR | THE | THR | LEU | |
| 390 391 392 | 367 368 369 370 | 367 369 369 370 | | | LEU VAL | VAL | LEU VAL VAL | LEU VAL | CYS LEU VAL VAL | | | | GLU VAL SER | GLU | MET VAL THR | MET VAL LYS | CYS MET VAL LYS | LEU THR SER | CYS LEU VAL ARG | VAL | LEU VAL LEU | THR CYS LEU VAL LEU | LEU | |
| 393 394 395 | 371 | 371 372 | · ::: | j.ir | ARG ALA PHE | ASP LEU | ASP | VAL ASP LEU | ASP | | | - : | GLY PHE TYR | GLY | SER | GLY | GLY | . GLY | | | | | ASP: | |
| 396 397 398 | 373 374 375 | 373 374 375 | | | ASN | GLU SER GLU | GLU SER GLU | SER GLU | SER GLU | | | | TYR PRO GLU | PRO | PRC | TYR PRC PRO | TYR PRO PRO | PRO ASN | PRO | GLU SER GLU | GLU SER GLU | ASP LEU GLU SER GLU | THR THR TYR | |
| 399 400 | 376 377 | 376 · | | • | GLU VAL | LYS | LYS | LYS | LYS | | | | ASP ILE HIS | ACD | SER | ASP ILE | | . ASP | ASP | GLU | GLU | GLU | GLY | |
| 401 402 403 | 378 379 - | 378 ' 379 | === | | VAL | ASN VAL ASN | VAL ASN | ASN VAL ASN | VAL ASN | | | | LEU | | SER | TYR | TYR | GLY, | VAL | ILE | ILE | ASN ILE THR | LEU ASN | |
| 404 405 406 | 380 381 382 | 380 381 382 | | | ARG | TRP | VAL THR TRP | VAL THR TRP | VAL THR TRP | | | | TRP | | VAL | THR | VAL | VAL GLU | ARG | VAL THR TRP | THR | VAL THR TRP | ILE SER TRP | |
| 407 | 382 383 | 383 384 | | | === | ASN GLN | ASN GLN | ASN GLN | ASN GLN | | | | SER | | GLU | TRP LYS | TRP GLN | TRP | LEU | VAL | VAL | VAL ARG | ALA | |
| 409 410 411 | 384 385 | 385 386 | | | | GLU LYS | GLU | GLU LYS | GLU LYS | | | | ALA GLN THR | | ARG ASN | MET ASN | MET ASN | SER ASN | GLY ASN | GLU ARG | GLU ARG | GLU | HIS | |
| 412 413 414 | 386 | 387 | === | | | LYS | LYS | LYS | LYS | | | | LYS MET ASP | | GLY | GLY | GLY | GLY | GLU GLU LEU | LYS | LYS | LYS LYS | GLY | |
| 414 415 416 417 | 387 388 389 | 388 389 390 | === | | | THR SER VAL | THR SER VAL | THR SER VAL | THR PRO VAL | | | | PRC ILE ASN | | GLU LEU GLU | GLN PRO GLN | GLN PRO GLN | HIS ILE GLU | PRO | SER | SER | SER ILE GLY | ALA | |
| 418 419 | 390 391 392 | 391 392 393 | === | | | SER ALA SER | SER ALA SER | SER ALA SER | SER ALA SER | | | | PHE VAL THR | | GLN ASP TYR | GLU ASN TYR | GLU ASN TYR | LYS ASN TYR | SER TYR | SER | SER | SER ALA SER | ASP THR | |
| 419 420 421 422 | 393 3 94 | 394 395 | | | | GLN TRP | GLN TRP | GLN TRP | GLN TRP | | | | ALA GLN | | LYS ASN | ASN | ASN | ASN | PHE | ARG | ARG | ARG | MET ASN | |
| 423 424 425 | 395 396 397 | 396 397 398 | | | === | TYR THR LYS | TYR THR LYS | TYR THR LYS | TYR THR LYS | | | | PRO VAL ARG | | THR LEU PRO , | PRO PRO | THR PRO PRO | THR GLU PRO | PRO LEU | THR. | THR | THR LYS | THR GLU | ٠. |
| 426 427- 428 | 398 399 | 399 400 401 | | | | HIS HIS ASN | HIS HIS | HIS HIS ASN | HIS | | | 1475 | GLN. SER. GLY. |) -), (| VAL LEU | THR MET " | THR MET ASP | VAL MET | GLU | HIS; | HIS | HIS | HIS | |
| 429 430 431 | 401 | 402 | === | | === | ASN | ASN | ASN | ASN | | | | | | ASP | ASP | ASP | ASP | GLY GLY | ASN | ASN | ASN | | |
| 432 433 434 435 | 402 403 | 403 404 | | | | ALA THR | ALA | ALA THR | ALA THR | | | | ASP LYS | | GLU SER | GLY SER | GLY SER | GLY SER | ALA ILE | | | ALA THR | ALA | |
| 435 436 437 | 404 405 406 | 405 406 407 | === | | === | THR | THR SER ILE | THR SER ILE | THR SER ILE | | | | PHE GLN ILE | | TYR PHE LEU | TYR PHE LEU | TYR PHE LEU | PHE PHE MET | LEU | SER | SER | THR | SER | |
| 438 439 | 407 408 | 40B 409 | === | | | THR | THR | THR | THR | | | | TRP SER | | TYR SER | TYR SER | TYR SER | TYR SER | THR SER | THR | THR SER | THR | MET GLY | |
| 440 441 442 | 409 410 411 | 410 411 412 | | | | ILE LEU PRO | ILE LEU PRO | ILE LEU PRO | ILE LEU PRC | | | | VAL LEU ARG | | LYS LEU SER | LYS LEU ASN | LYS LEU ASN | LYS LEU ASN | VAL LEU ARG | LEU | LEU | ILE LEU PRO | ALA | |
| 443 444 445 | 412 413 414 | 413 414 415 | === | | SER | VAL VAL ALA | VAL VAL ALA | VAL VAL ALA | VAL VAL ALA | | | | LEU PRO VAL | | VAL ASP THR | VAL LYS LYS GLU | VAL LYS LYS GLU | VAL GLU ARG | SER | ASP | ASP | VAL ASP ALA | CYS | |
| 446 447 448 | 415 416 417 | 416 417 418 | | | ASP | LYS ASP TRP | LYS ASP TRP | LYS ASP TRP | LYS ASP TRP | | | | ALA LEU SER | | ASP SER TRP | GLU THR TRP | GLU LYS TRP | SER ARG TRP | THR | ASP | ASP | ALA LYS ASP | ASP | |
| 449 | 418 | 419 | === | | LYS | ILE | ILE | ile | ÎLE | | | | PRO | | MET | GLN | GLN | ASP | LYS | ILE | ILE | TRP | GLU | |
| 450 451 | 419 420 | 420 | | | | GLU | GLU | GLY | GLU | | | | SER LEU | | ARG GLY | GLN GLY | GLN GLY | SER ARG | GLN GLY | GLU GLY | GLU GLY | GLU GLY | GLY | |
| 452 453 454 455 | 421 422 423 424 | 422 423 424 425 | | | IIK | GLY TYR GLY TYR | TYR GLY TYR | TYR GLY TYR | TYR GLY TYR | | | | ASP THR TYR | | ASP ILE TYR | ASN THR PHE | ASN THR PHE | PRO PHE | GLN TYR | GLY TYR | GLY TYR | GLU GLY TYR | GLN PHE | |
| 456 457 | 425 426 427 | 426 427 428 | | | CYS | CYS VAL | GLN CYS ILE | GLN CYS ILE | GLN CYS ILE | | | | THR CYS VAL | | THR CYS SER | THR CYS SER | CYS SER | CYS SER | SER | GLN | GLN | GLN | THR | |
| 458 459 460 | 427 428 429 | 428 429 430 | | | GLY | VAL ASP ARG | VAL ASP HIS | VAL ASP HIS | VAL ASP HIS | | | | VAL GLU HIS | | VAL VAL HIS | VAL LEU HIS | VAL LEU | VAL VAL HIS | VAL GLY | VAL ASP | VAL ASP | CYS ARG VAL ASP HIS | VAL THR | |
| 461 462 | 430 431 | 431 432 | | | GLU | PRO ASP PHE | PRO | PRO ASP | PRO | | | | GLU | | GLU ALA | GLU GLY LEU | GLU | GLU GLY LEU | GLU : | PRO | PRO | | ALA | |
| 463 464 465 | 432 433 434 | 433 434 435 | | | PRO MET | PRO LYS | PHE PRO LYS | PHE PRO LYS | PHE PRO LYS | | | | SER GLN THR | | LEU HIS ASN | LEU HIS ASN | LEU HIS ASN | HIS ASN | PRO MET | PRO LYS | PRO LYS | PRO LYS | PRO PHE | |
| 466 467 468 | 435 436 437 | 436 437 | === | | PHE | | PRO | PRO | PRO | | | | LYS LEU ASN | | HIS HIS THR | HIS HIS THR | HIS HIS THR | HIS HIS VAL | SER PHE | PRO | PRO | PRO | PRO | |
| 469 470 | 438 439 | 438 439 | | | GLN LYS | ARG | VAL | VAL | VAL ARG | | | | ALA | | GLN LYS | GLU LYS | GLU LYS | GLU LYS | GLN : | VAL ARG | ARG | VAL ARG | HIS | |
| 471 472 473 | 440 441 | 440 441 442 | === | | | ILE | SER | SER ILE | SER | | | | SER LYS | | ASN LEU | SER | SER LEU | | | | | SER ILE | | |
| 473 474 475 | 442 443 444 | 443 444 | | | ASP ARG LEU | PRO | THR LYS THR | THR LYS THR | THR LYS THR | | | | SER LEU GLU | | SER ARG SER | SER HIS SER | SER HIS SER | SER ARG PRO | ARG 1 | LYS : | LYS | THR : Lys : Ala : | LYS | |
| 476 477 478 | 445 446 | 445 446 | | | SER GLY | GLN | PRO | PRO | PRO | | | | ILE SER GLY | | PRO GLY LYS | PRO GLY LYS | PRO GLY LYS | PRO GLY | SER I | PRO | PRO | PRO A | ARG | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

BEST AVAILABLE COPY

| | | | | | | | | | | 69 | 4 | | | | | | | | | | |
|---|---|---|----------------------|--|---|---|---|--|---|--|--|--|--------------|-------------|-------------|--------------|--|--|--|---|--|
| BEAVI | EU INDEX | OU | 123 RABBIT IGG | | | | | 128 39-1A, 20B 'CL | 129 PA19 'CL | 130 CT-12 | 131 PIKA | 1 32 HA-3 | 133 HA-11 | 134 HA-1 | 135 HA-5 | 136 HA-LT | 137 SYRIAN HAMSTER IGM 'CL | 138 GP 1G51 | 139 GP, IGG: | 140 1 GP P 1632 | 14: 1000 |
| 361 362 363 364 365 367 367 367B | 341 342 343 344 345 346 | 340 341 342 343 344 345 | | GLY GLN PRO LEU GLU PRO | GLY GLU PRO LEU GLU PRO | GLN PRO LEU GLU | GLY GLN PRO LEU GLU PRO | GLY GLN PRO LEU GLU PRO | VAL VAL THR PRO PRO | | • | GLY GLU ALA LEU GLU PRO | 112 | | | | SER PRO SER THR ASP ILE | PRO PRO ARG ILE PRO | PRO PRO ARG ILE PRO | ALA O PRO F ARG V MET O PRO | ASP SLN PRO VAL SLY |
| 368 369 3771 3772 373 374 375 377 | 347 348 349 350 351 352 354 355 356 | 346 347 348 349 350 351 352 353 | | LYS VAL TYR THR MET GLY PRO PRO ARG GLU | TYR THR MET GLY PRO PRO ARG | VAL TYR THR MET GLY PRO PRO | LYS VAL TYR THR MET GLY PRO PRO ARG GLU | LYS VAL TYR THR MET GLY PRO PRO ARG GLU | GLN VAL HIS LEU PRO PRO PRO PRO | VAL TYR THR LEU GLY PRO PRO ARG | VAL TYR VAL LEU ALA PRO SER ARG | LYS VAL TYR THR MET | | | | | GLN A:A PHE PRO PRO PRO SER PHE | GLX VAL TYR LEU PRO PRO PRO ARG ASX | GLX VAL TYR LEU PRO PRO PRO ARG ASX | VAL I TYR P THR I LEU I PRO P PRO P SER S | RO |
| 379 379 381 381 383 385 385 387 | 357 358 359 360 361 362 363 364 | 355 356 357 358 360 361 362 363 | | LEU SER SER SER ARG SER VAL SER | GLN LEU SER | LEU SER SER ARG SER VAL | LEU SER SER ARG SER VAL | LEU SER SER ARG SER VAL | GLU LEU ALA LEU ASN GLU GLN VAL THR | | | | | | | | GLY ILE PHE LEU ASN LYS SER ALA THR | GLX LEU SER LYS LYS LYS VAL SER | GLX LEU SER LYS LYS LYS VAL SER | GLU A | ER LE |
| 388 3890123 39912 3993 3995 3997 3998 399 | 365 366 367 368 369 370 371 372 373 374 375 | 365 366 367 368 370 371 3773 375 376 | | THR CYS MET ILE ASN GLY PHE PRO SER ASP | THR CYS MET ILE ASP GLY PHE TYR PRO SER | THR CYB MET ILE ASN GLY PHE TYR | THR CYS MET ILE ASN GLY PHE TYR PRO SER ASP | SER LEU THR CYST ILE ASN GLY PHE TYRO SER ASP | THR CYS LEU VAL ARG GLY PHE SER PRO LYS ASP | | | | | | | | THR CYS LEU VAL THR ASN LEU ALA THR TYR ASP | THR CYS MET ILE THR GLY PHE TYR PRO ALA ASP | LEU THR CYS MET ILE THR GLY PHE TYR PRO ALA ASP | THR S CYS C LEU L ILE V ILE T ASN A PHE L PHE A PRO T ALA T | EU YS EU AL HR SP EU LA YR |
| 400 401 402 403 404 405 406 407 408 | 377 378 379 380 381 382 383 | 377 378 379 380 381 382 383 384 | | SER VAL GLU TRP GLU LYS | SER VAL GLY TRP GLU | SER VAL GLU | ILE SER VAL GLU TRP GLU LYS | ILE SER VAL GLU TRP GLU LYS | VAL LEU VAL SER TRP ARG HIS | | | | | | | | THR LEU ASN ILE SER TRP SER SER | ILE ASN VAL GLU TRP ASP SER | ILE ASN VAL GLU TRP ASP SER | HIS S VAL V | AL HR LE ER RP HR |
| 409 410 411 412 | 384 385 | 385 386 | | ASN GLY | ASP GLY | ASN GLY | ASN GLY | ASN GLY | GLY GLY | | | | | | | | ARG SER | SER GLU | SER GLX | | LU LU |
| 413 414 415 416 417 | 386 387 388 389 | 387 388 389 390 | | LYS ALA GLU | LYS ALA GLU ASP | GLU | LYS ALA GLU ASP | LYS ALA GLU | GLU VAL PRO GLU | | | | | | | | GLY GLU PRO | PRO SER ASP | PRO SER ASP | PRO VAL AS SER GI GLU AS | SN LY LA |
| 418 419 420 421 422 | 390 391 392 393 | 391 392 393 394 | | ASP ASN TYR LYS THR | ASP TYR LYS THR | ASN TYR LYS THR | ASN | ASP ASN TYR LYS THR | SER PHE LEU VAL | | | | | | | | LEU GLU THR LYS THR | TYR LYS ASN | TYR LYS ASN | GLU LYS THE LYS HI | YS HR IS |
| 422 423 424 425 426 427 428 429 430 431 432 | 394 395 396 397 398 399 400 | 395 396 397 398 399 400 401 | | PRO ALA VAL LEU ASP SER ASP | ASP SER | | | THR PRO ALA VAL LEU ASP SER ASP | TRP LYS SER MET PRO GLU SER SER GLN ASP | | | | | | | | LYS LEU THR GLU SER HIS PRO ASN | PRO PRO VAL PHE ASP SER | PRO VAL PHE ASP | PRO II PRO SE ILE GI GLU SE ASP BI ALA PE | ER LU ER LU ER LS ER |
| 433 434 435 436 437 | 402 403 404 405 406 | 403 404 405 406 407 408 | | GLY SER TYR PHE LEU | GLY SER TRP PHE LEU TYR | SER TYR PHE LEU | | GLY SER TYR PHE LEU | LYS THR TYR ALA ILE | | | | | | | | GLY THR PHE SER ALA | GLU THR PHE PHE LEU | GLY SER PHE PHE LEU | GLY GL SER TH TYR PH PHE SE LEU AL | Y IR IE IR |
| 439 441 442 443 444 445 446 447 448 449 | 409 410 411 412 413 414 415 416 417 | 409 410 411 412 413 414 415 416 417 418 419 | | TYR ASN LYS LEU SER VAL PRO THR SER GLU TRP GLU | SER LYS LEU SER VAL PRO THR SER GLU TRP GLN | SER LYS LEU SER VAL PRO THR SER GLU TRP GLN | | TYR SER LYS LEU SER VAL PRO THR SER GLU TRP GLN | THR SER LEU ARG VAL PRO ALA GLU ASP TRP ASN | | | | | | | | ILE GLY GLY ALA ASN VAL CYS VAL GLU ASP TRP ASP | TYR SER ARG LEU LYS VAL ASP THR ASN ALA TRP ASN | TYR SER ARG LEU LYS VAL ASP THR ASP ALA TRP ASN | TYR ME SER GL LYS GL LEU AL THR THE VAL YA ASP CY: LYS VAI SER GLA ALA GLA TRP TRI ASP GLA | K L S L D |
| 450 451 452 453 454 455 | 419 420 421 422 423 424 425 | 420 421 422 423 424 425 426 | | ARG GLY ASP VAL PHE THR CYS | GLY ASP VAL PHE THR | GLY ASP VAL PHE THR | | ARG GLY ASP VAL PHE THR | GLN GLY ASP THR TYR SER CYS | | | | | | | | SER GLY LYS GLU PHE VAL | GLY GLU SER PHE THR | ASN GLY GLU SER PHE THR | GLN SEI GLY GLI THR GLI VAL GLI TYR PEI THR TEI | R F B R |
| 456 457 458 459 460 462 463 464 465 | 425 426 427 428 429 430 431 432 433 434 | 427 428 429 430 431 432 433 434 435 | | SER VAL MET HIS GLU ALA LEU HIS ASN | SER VAL MET HIS GLU ALA LEU HIS ASN | SER VAL MET HIS GLU ALA LEU HIS ASN | | SER VAL MET BIS GLU ALA LEU HIS ASN | MET VAL GLY HIS GLU GLY LEU ALA GLU | | | | | | | | CYS THR VAL THR HIS ARG ASP LEU PRO SER | LEU PRO ASN | ASN | CYS CTI SER TEI VAL VAI MET TEI BIS ELI GLO TER ALA ASP LEU LEU BIS PRO ASN SER | |
| 466 467 468 469 470 471 472 | 435 436 437 438 439 440 441 | 436 437 438 439 440 441 442 | | HIS TYR THR GLN LYS SER ILE SER | HIS TYR THR GLN LYS SER ILE | TYR THR GLN LYS SER ILE | | HIS TYR THR GLN LYS SER ILE SER | HIS PHE THR GLN LYS THR ILE ASP | | | | | | | | PRO GLN LYS LYS PHE ILE SER | VAL ILE GLN LYS SER ILE | GLN LYS SER ILE | HIS VAL VAL LED TER | |
| 474 475 476 477 479 | 443 444 445 446 | 443 444 445 446 | | ARG SER PRO | SER SPRO | ARG SER PRO SLY | | ARG SER PRO GLY LYS | ARG LEU ALA GLY LYS | | | | | | | | LYS PRO ARG | ARG SER PRO | ARG | ARG ARG SER PRO PRO LYS GLY GLY | |

BEST AVAILABLE COPY

| OP 107 | - COM 01 | | ******* CU1 | | · | | | | 695 | | | | | | | |
|--------------------------|----------------------------------|---------------------------------|----------------------------------|--------------------------|-------------------|--------------------|------------------------------|---------------------------|--------------------------|--------------------|---------------------------------|------------------------------------|-------------------------------------|---------------------------------|---|--|
| HEAV. | | | 142 143 PIG SHEEP IGG PSHC | | | 146 GOAT IGG | 147 CHICKEN IGM 'CL | 148 Elops VH 'CL | 149 Re4b 'CL | 150 Re20 'CL | 151 Xenopus laevis Igy | 152 Xenopus laevis c8(II) | 153 Xenopus laevis cl4(II) | 154 Xenopus laevis c35 | 155 Xenopus X 1aevis 1 c40(II) | |
| 361 362 363 364 | 341 342 343 | 340 341 342 | GLY GLN ALA | | | - | VAL VAL GLN | | ASF VAL SER | === | THR ALA ILE THR | PRO ILE THR | <u>X</u> | | | |
| 365 366 367 | 344 345 346 | 343 344 345 | ARG GLU | | | | ASP | PRO GLU ALA GLN | CYS ASP LYS | | PRO LYS | PRO THR SER | | | | |
| 367A 367B 368 | 347 | 346 | PRO GLN | | | | ALA | ASP | LEU SER | | VAL | ILE | | | | |
| 369 370 | 348 349 | 347 348 | VAL TYR VAL | | | | ILE ARG | ALA LYS ILE | ILE | | ASP | GLN VAL ILE | | | | |
| 371 372 373 | 350 351 352 | 349 350 351 | ALA | | | | VAL ILE THR | PRO | ILE LEU PRO | === | LEU PRO | THR ILE PRO | | | | |
| 374 375 376 377 | 353 354 355 356 357 | 352 353 354 | PRO PRO GLN GLU | | | | PRO SER PHE | PRO | PRC GLN | === | PRO SER | PRC SER | | | | |
| 378 379 380 | 357 | 354 355 356 | GLU | | | | VAL ASP | PRO GLU GLU | GLU GLU GLU | | PRO LYS ASP | LEU GLU SER | | | | |
| 381 382 383 | 358 359 360 | 357 358 359 360 | LEU SER LYS | | | | ile Phe Ile Ser | LEU PHE LEU GLN | LEU MET GLU | === | LEU LEU VAL THR | PHE GLU LYS | | | | |
| 384 385 386 | 361 362 363 | 361 362 363 | SER THR LEU | | | | LYS SER | GLN THR ARG | MET THR VAL | | 175 | LYS SER | | | | |
| 386 387 388 389 | 364 365 | 364 365 | SER VAL THR | | | | ALA THR LEU | THR LEU | THR LEU | | GLU ALA LYS VAL | ALA THR LEU | | | | |
| 390 391 392 | 366 367 368 369 370 | 366 367 368 369 370 | CYS LEU VAL | | | | THR CYS ARG VAL | THR CYS LYS ILE | THR CYS LEU VAL | | TYR CYS VAL ILE | THR CYS LEU VAL | | | | |
| 393 394 395 | 371 | 370 371 372 | THR GLY PHE | | | | SER ASN | THR GLY | SER ASP | | SER ARG | SER | | | | |
| 395 396 397 398 | 372 373 374 375 | 373 374 375 | TYR PRO ASP | | | | VAL ASN ALA | ASP VAL ASP GLY | ALA PRO TYR GLY | === | MET ALA SER THR | MET ALA ASN SER | | | | |
| 199 100 101 | 376 377 378 379 | 376 377 | TYR ILE ALA | | | | ASP | VAL | ILE | | ASP ASP | GLU ASP | | | | |
| 102 103 104 | 379 | 378 379 380 | VAL | | | | LEU GLU VAL | ASN VAL | THR | | THR | ARG SER | | | | |
| 104 105 106 107 | 380 381 382 | 381 382 383 | GLU TRP GLN | | | | SER TRP TRP | THR TRP GLU VAL | VAL SER TRP LYS | | VAL GLN TRP SER | ILE SER TRP PHE | | | | |
| 108 | 383 | 384 | LYS | | | | LYS | GLY | ĀRĞ | | ARG | LYS | | | | |
| 110 111 112 | 384 385 | 385 386 | ASN GLY GLN | | | | GLU LYS | SER GLU | GLY | === | ASP GLY | LYS SER GLY | | | | |
| 13 14 15 | 386 387 | 387 388 | PRO GLU SER | | | | GLY GLY LYS | VAL ARG | ASN VAL | === | LYS LYS | THR GLN | | | | |
| 16 17 18 | 388 389 390 | 389 390 391 | GLU ASP Lys | | | | LYS LEU GLU | VAL GLY GLN | PRO LEU VAL | | ALA LEU ALA | GLU ILE PRO | | | | |
| 19 20 21 | 391 392 393 | 392 393 3 94 | TYR GLY THR | | | | THR ALA LEU | PHE ASP GLU | SER TYR ILE | === | PHE ASP SER | LEU LYS THR | | | | |
| 22 23 24 25 | 395 396 | 395 396 397 | THR THR SER . | | | | GLY LYS ARG | GLN LYS MET | GLN PRO THR | | PRO GLU | GLU LEU GLY | | | | |
| 26 27 | 398 · | 398 399 400 , | GLN LEU ASP | | | | VAL LEU*, GLN | ILE SER LYS | GLY | === | LYS. ALA TYR | ASP ALA ILE | | | | |
| 28 29 30 31 | | 401 402 | ALA ASP | | | | SER ASN | LEU | === | === | === | TYR ASN | | | | |
| 32 33 | 402 | 403 404 | GLY | | | | GLY | ILE ASP TYR | PRO | === | ASP GLY | ASP ASN ARG | | | | |
| 35 36 37 | 404 | 405 406 407 | TYR PHE LEU | | | | LEU TYR THR | GLU GLU TRP | ALA ASP ILE | === | THR PHE THR | THR TYR SER | | | | |
| 38 39 40 41 | 407 | 408 409 410 | TYR SER ARG | | | | ASP GLY | LYS ASN ARG | SER | | VAL LYS SER | VAL LYS GLY | | | | |
| 92 | 411 | 412 | LEU ARG | | | | VAL ALA THR | THR GLU TYR | VAL ASN | | THR LEU LYS | THR THR THR | | | • | |
| 43 44 45 46 | 412 413 414 415 416 | 413 414 415 116 117 | VAL ASP LYS ASN | | | | VAL CYS ALA SER | THR CYS LYS VAL | SER THR | | ILE SER PRO GLY | VAL CYS ALA | | | | |
| | 416 4 417 4 418 4 | 117 118 119 | SER TRP GLN | | | | GLU TRP | GLU | ASP TRP | | ASP TRP | ASP GLU TRP | | | | |
| | | 120 | GLU | | | | | ASP LEU | | | GLU | ASN | | | | |
| 51 52 53 | 420 421 422 423 424 | 121 122 123 | GLY ASP THR | | | | GLY ASP | SER PRO | GLY ASP | | ASN LYS LYS GLN | ASN ASP LYS | | | | |
| 54 55 | 423 4 424 4 | 25 | TYR ALA CYS | | | | TYR VAL | ARG THR | GLU : | | PHE ASN | PHE VAL | | | | |
| ,, | 425 4 426 4 427 4 428 4 | 26 27 28 29 30 | VAL VAL MET | | | | LYS VAL | TYR ARG | ALA : | | CYS LYS VAL | CYS LYS VAL | | | | |
| 50 51 | 429 4 430 4 431 4 | 30 31 32 | BIS GLU | RIS GLU | HIS GLU ALA | | HIS PRO | GLU CYS | HIS - Ala - | | VAL BIS PRO | GLU HIS THR | | | | |
| 3 4 5 | 431 4 432 4 433 4 434 4 | 31 32 33 34 35 | n12 | ALA LEU HIS ASN | LEU HIS ASN | | ASP LEU LEU PHE | GLY LYS | MET - | | ASP LEU PRO SER | GLU LEU ALA SER | | | | |
| 6 7 8 | 477 | 36 37 | HIS TYR | HIS TYR THR | HIS TYR THR | | PRO MET | GLN I | PRO - | | PRO ILE | MET LYS | | | | |
| ò | 138 4 139 4 | 38 39 40 | LYS I | sln Lys | GLN LYS | | GLU . | THR C | THR - GLU - | | GLU | GLU VAL | | | | |
| | 141 4 142 4 | 41 42 | ILE Y | /AL | SER THR SER | | MET | ILE : | ILE - | | LYS SER ILE | PHE | | | | |
| 4 4 5 4 | 143 4 | 43 44 45 | PRO 9 | SER | LYS Ser | | LYS I | PRO I | TRP - LYS - | | GLN LYS SER | PHE LYS GLU | | | | |
| 8 | 16 4 | 46 | GLY (| RO | ALA GLY | | | ALA I | LYS - | | GLN | LYS | | | | |

| EMANT COMPUTANT CHAIRS CHI PREADER CONT A COT A | HEAVY CO | ESTANT CRAINS (| THE DECICE (and | | 696 | |
|---|---|--------------------------|-----------------|-------------------------------|--|------------------------------|
| 10 10 10 10 10 10 10 10 | , 64 | 011 163 | | | OCCURRENCES S AMINO OF MOST COMMON ACIDS AMINO ACID | VARIABILITY |
| 367, 346 346 327 327 327 327 327 327 327 327 327 327 | 361 341 362 363 342 364 343 365 344 | 340 341 342 343 | | 74 37 89 90 91 | 5 54 (GLY) 8 11 (SER) 14 33 (GLN), 32 (GLN) 10,11 43 (PRO) | 26.9 27. 38.,39. |
| 10 10 10 10 10 10 10 10 | 367 346 367A 367B 368 347 | 345 | | 92 92 5 5 | 4 2 (THR) 1 5 (PRO) | 50.,52. |
| | 369 348 370 349 371 350 372 351 373 352 | 348 349 350 | | 93 94 94 | 6 65 (VAL) 10 57 (TYR) 7 39 (THR) 5 48 (LEU) | 8.6 16. 17. |
| | 374 353 | 352 353 354 | | 93 93 57 | 3 87 (PRO) | 9.6 3.2 7.3 |
| Section Sect | 379 386 381 358 382 359 | 356 357 358 | | 91 36 | 5 14 (GLU) | 13 |
| 3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3- | 383 360 384 361 | 360 361 362 363 | | 92 | 10 33 (LYS) 0 33 (LYS) 0 32 (SER) | 29.,32. |
| 10 10 10 10 10 10 10 10 | 389 366 390 367 | 365 366 367 368 | | | 4 81 (LEU) 6 83 (THR) | 4.5 6.7 |
| 398 376 376 391 10 30 30 30 30 30 30 3 | 393 370 394 371 395 372 | 370 | | | 9 22 (THR) 6 52 (GLV) | 6.9 30. |
| \$ 19 | 398 375 399 376 400 377 | 376 | | 93 93 66 | 10 30 (SER) | 8.2 31. |
| 407 382 383 91 12 24 (GLV) 42,151. 408 385 385 91 12 24 (GLV) 42,151. 409 410 384 385 16 6 7 10 27 (GLV) 24,151. 411 385 386 87 10 27 (GLV) 27,121. 412 385 386 88 10 12 21 (GLV) 145. 413 386 387 88 11,12 35 (GLV) (GLV) 28,111. 414 386 387 88 11,12 35 (GLV) (GLV) 28,111. 415 387 389 88 11,12 35 (GLV) (GLV) 28,111. 418 390 391 88 11,12 35 (GLV) (GLV) 28,111. 419 390 391 88 11,12 35 (GLV) (GLV) 28,111. 419 390 391 88 11,12 35 (GLV) (GLV) 28,111. 419 390 391 88 11,12 35 (GLV) (GLV) 28,111. 419 391 392 393 88 11,12 35 (GLV) (GLV) 28,111. 421 394 395 396 88 10 37 (ASN), 36 (ASN) 23, 24. 422 394 395 396 88 10 37 (ASN), 36 (ASN) 23, 24. 423 395 396 88 10 37 (ASN), 36 (ASN) 23, 24. 424 395 398 399 400 88 112 37 (GLV) 44 (GRR) 24. 427 399 400 401 88 112 37 (GLV) 44 (GRR) 24. 428 400 401 88 112 37 (GLV) 34. 429 400 401 88 112 37 (GLV) 34. 430 401 402 88 10 37 (GLV) 34. 431 405 406 405 88 10 37 (GLV) 34. 432 400 401 88 9 10 37 (GLV) 34. 433 406 406 406 88 9 10 37 (GLV) 34. 434 407 408 409 88 10 37 (GLV) 34. 439 408 409 401 88 7 30 (GLV) 34. 440 409 409 401 88 7 30 (GLV) 34. 441 414 412 88 9 7 45 (GLV) 35. 442 433 401 402 88 9 17 26 (GLV) 35. 443 404 405 406 606 88 7 30 (GLV) 35. 444 415 416 417 99 110 36 (ASP), 31 (ASP) 25. 445 416 417 418 89 9 17 26 (ASP), 31 (ASP) 35. 447 416 417 418 89 9 17 26 (ASP), 31 (ASP) 35. 448 417 418 419 99 17 26 (ASP), 31 (ASP) 35. 450 419 420 91 11 28 (GLV) 37 (GLV) 37. 451 422 423 89 11 28 (GLV) 37 (GLV) 37. 452 424 424 425 89 11 10 36 (ASP), 31 (ASP), 32. 452 424 425 89 11 10 36 (ASP), 31 (ASP), 32. 453 400 401 98 99 10 99 11 11 11 11 11 11 11 11 11 11 11 11 | 402 379 403 404 405 380 | 378 379 380 | | 90 31 31 92 | 4 14 (ILE) | |
| 13 | 408 383 409 | 384 | | 91 90 81 | 10 34 (SER) | 24. |
| ### 11 388 389 88 112 23 5(228 (PRO) 16.1 14.1 14.1 14.1 14.1 14.1 14.1 14.1 | 411 385 412 413 | 386 | | 19 28 | 10 27 (ASN), 26 (ASN) 8,9 34 (GLY) 4 10 (GLN) 6 12 (GLU) | 20.,23. |
| 421 393 394 395 89 11 40(LYS) 34. 422 393 395 88 10.11 37 (THR) 24.26. 423 395 396 88 10.11 37 (THR) 24.26. 424 395 396 397 88 10 32 (PRO) 27. 426 398 398 88 112 37 (ASP) 24. 427 399 400 87 13 33 (PRO) 24. 428 400 401 88 12 37 (ASP) 29. 428 400 401 88 12 37 (ASP) 29. 430 401 402 14 13 35 (SER) 26. 431 403 404 88 9 42 (ASP) 404 405 88 6 42 (ASP) 406 405 88 6 6 45 (THR) 9.4 433 402 403 404 88 9 5 44 (GLY) 15. 435 404 405 88 6 8 6 45 (THR) 15. 437 408 407 88 7 41 (PRE) 12. 439 409 409 88 7 41 (PRE) 12. 439 409 409 88 7 41 (PRE) 12. 430 401 411 88 7 7 (ASP) 12. 431 402 411 88 7 7 (ASP) 12. 441 410 411 88 7 7 (ASP) 10. 442 411 412 88 7 7 (ASP) 10. 443 412 413 89 10 42 (ASP) 16. 444 413 414 415 89 17 7 (ASP) 16. 445 417 418 419 89 10 7 76 (VAL) 5. 446 415 416 417 991 11 33 (ASP) 35. 447 416 417 991 11 36 (ASP) 31 (ASP) 32. 448 417 418 819 88 4 42 (ASP) 31 (ASP) 31 (ASP) 32. 450 419 420 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 416 388 417 389 418 390 | 389 390 391 | | 88 86 : 83 | 28 (PRO) 11,12 35 (GLU),34 (GLU) 9 18 (GLU) | 45. 38. 28.,31. 41. |
| 128 400 401 88 12 37 (ASP) 22 23 24 24 24 24 24 24 | 922 394 | 394 395 | | 89 88 88 1 | 11 40 (LYS) 12 44 (THR) 10,11 37 (THR) | 24. 24. 24.,26. |
| 431 432 433 402 403 404 405 406 407 408 408 408 408 408 408 408 409 409 409 409 409 409 409 409 409 409 | 427 399 | 400 | • | 88 87 88 84 | 11 37 (PRO) 12 24 (VAL) 13 33 (LEU) 12 37 (ASP) 11 35 (SER) | 26. 44. 34. 29. |
| 439 406 407 888 87 30(LEU) 21. 4399 408 409 899 10 42(TYR) 21. 4319 408 409 410 889 7 38(LYS) 16.9 4410 411 410 411 899 7 38(LYS) 16.1 442 411 412 87 8 23(ARG) 30.1 443 412 413 414 889 5 72(LEU) 16.1 444 413 414 415 90 10 26(ARP) 35. 445 414 415 416 90 11 31(LYS) 35. 447 416 417 90 11 33(SER) 30. 448 417 418 419 91 10 36(ARP) 31(LYS) 25. 449 418 419 91 10 36(ARP) 31(ARP) 25. 450 419 420 91 10 28(GLM), 27(GLM) 32., 34. 451 420 421 91 10 28(GLM), 27(GLM) 32., 34. 452 421 422 99 89 12 28(GLM), 27(GLM) 32., 34. 453 422 423 91 9 25(ARP), 31(ARP) 33., 34. 455 424 425 91 13 60(PHE) 39. 456 425 426 426 99 11 36(GLM), 27(GLM) 32., 34. 457 426 427 428 99 12 89(CYS) 2. 458 427 428 429 91 13 60(PHE) 39. 459 428 429 91 10 26(MER) 39. 450 429 430 99 10 35(SER) 25. 450 429 430 99 10 35(SER) 25. 451 420 421 422 99 11 36(GLM), 27(GLM) 32., 34. 455 426 427 428 99 12 89(CYS) 2. 458 427 428 99 12 89(CYS) 2. 459 428 429 99 10 35(SER) 25. 460 429 430 99 10 35(SER) 25. 460 429 430 99 10 35(SER) 25. 461 430 431 99 10 26(MET) 33.1 462 431 431 99 10 26(MET) 35. 463 434 435 99 10 46(ARP) 15. 464 435 436 437 99 10 46(ARP) 15. 465 436 437 439 99 10 36(KET) 35. 467 448 441 441 99 10 66(ARP) 39. 471 440 440 99 66 43(CLM) 13. 472 441 441 99 90 66 64(CLM) 15. 473 444 444 444 99 90 66 64(CLM) 15. 474 443 443 443 99 90 66 64(CLM) 36. 475 444 444 444 99 90 66 64(CLM) 36. 476 445 445 445 99 90 79 64(CLM) 36. 477 446 443 443 99 90 66 64(CLM) 36. 478 446 445 445 99 90 90 79 64(CLM) 36. 478 446 445 445 99 90 79 64(CLM) 36. 478 446 446 446 446 446 446 99 90 79 66 64(CLM) 36. 478 446 446 446 446 446 446 446 446 446 44 | 432 | 403 | | 16 85 14 15 | 3 11 (SER) 6 42 (ASP), 40 (ASP) 3 11 (GLY) 5 8 (THR) | 12.,13. 3.8 9.4 |
| ## 412 | 43/ 406 | 405 406 407 408 | | 88 88 88 88 | 9 41 (PHE) 7 30 (LEU) | 12. 14. 17. 21. |
| 447 416 417 418 416 417 91 10 36(ASP), 31(ASP) 2529. 448 417 418 419 91 10 36(ASP), 31(ASP) 2529. 449 418 419 91 12 25(GLN), 24(GLN) 44.,45. 450 419 420 1 1 1 (ASP) 1 (ASP) 451 420 421 90 8 71(GLY) 3234. 453 421 422 90 8 71(GLY) 3104 454 423 423 99 12 25(ASP), 24(+) 3334. 455 424 425 90 89 11 25(ASP), 24(+) 3334. 456 425 426 90 7 36(SER) 17. 456 426 427 90 7 36(SER) 17. 459 427 428 99 12 99(CYS) 2. 459 427 428 99 10 35(SER) 254 459 427 428 99 10 35(SER) 254 459 427 428 99 10 35(SER) 254 459 428 429 99 10 35(SER) 254 450 429 430 99 10 35(SER) 254 460 429 430 99 10 35(SER) 254 461 430 431 99 10 35(SER) 254 462 431 432 94 8 9 59 (AND) 463 432 433 434 95 5 6 42(ALA) 134 464 433 434 95 7 81(LEU) 5.9 465 436 437 95 10 45(ASN) 214 466 437 95 10 45(ASN) 214 467 436 437 95 10 45(ASN) 214 468 437 95 10 45(ASN) 214 472 441 441 95 7 53(SER) 154 473 442 444 440 95 7 53(SER) 134 473 442 444 440 95 7 53(SER) 134 473 444 444 444 99 7 7 53(SER) 134 476 445 445 99 8 9 10 111 477 446 446 446 99 90 7 91 91 91 91 91 91 91 91 91 91 91 91 91 | 442 411 4 443 412 | 410 411 412 | | 89 88 87 | 4 72 (SER) 7 38 (LYS) 5 72 (LEU) 8 23 (ARG) | 16. 6.1 |
| 418 419 420 1 1 2 25 (CIRP) 44.45. 450 419 420 1 1 1 (ASP) 451 420 421 1 1 (ASP) 452 421 422 91 10 28 (GIN), 24 (GIN) 32.34. 453 422 423 91 9 25 (ASP), 244 +) 33., 34. 454 423 424 89 11 3 60 (PHE) 39. 455 424 425 91 3 60 (PHE) 49. 456 425 426 90 7 36 (SER) 17. 457 426 427 90 2 89 (CYS) 458 427 428 89 10 35 (SER) 459 428 429 91 2 90 (VAL) 459 428 429 91 2 90 (VAL) 460 429 430 92 10 26 (MET) 35. 461 430 431 93 3 91 (MIS) 3.1 462 431 432 94 6 42 (ALA) 11. 463 432 433 95 7 43 (PRO) 464 433 434 435 95 7 43 (PRO) 465 436 437 95 10 26 (TRR) 466 435 436 437 95 10 26 (TRR) 467 438 439 99 6 6 43 (REI) 471 440 440 99 7 53 (SER) 13. 472 441 441 99 7 53 (SER) 13. 473 442 442 11 15 52 (ILE) 474 443 443 99 90 6 6 (AISR) 7.6 475 444 444 444 99 7 53 (SER) 13. 477 446 445 99 99 7 39 (ARR) 12. 478 446 445 99 99 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 447 416 4 | 116 | | 91 1 | 0 26 (ASP) 7 31 (LYS) 1 33 (SER) 0 36 (ASP) 31 (ASP) | 35. 21. 30. |
| # # # # # # # # # # # # # # # # # # # | 450 419 4 | 20 | | 91 1 | 4 82 (TRP) 2 25 (GLN), 24 (GLN) 1 1 (ASP) 1 1 (LEU) 0 28 (GLN), 27 (GLN) | 44.,45. |
| 460 429 430 92 10 26(RET) 35. 461 430 431 93 3 91(RIS) 35.1 462 431 432 94 8 59(GLU) 13. 463 432 433 94 6 42(ALA) 13. 464 433 434 95 5 8 41(EU) 5.9 466 435 436 95 10 43(PRO) 15. 467 436 437 95 12 38(RIS) 30. 468 437 95 12 38(RIS) 30. 468 437 95 10 38(RIS) 30. 469 438 438 63 6 50(TYR) 36. 470 439 439 94 7 43(RIN) 7.6 471 440 440 99 6 64(LYS) 8.4 472 441 441 99 90 6 64(LYS) 8.4 473 442 442 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 422 424 4 | 25 | | 91 89 1 91 90 | 71 (GLY) 9 25 (ASP), 24 (+) 1 25 (THR) 3 60 (PHE) 7 36 (SER) | 33.,34. 39. 4.5 |
| 401 431 432 433 95 6 42(ALA) 13. 464 433 434 95 7 81(LEU) 5.9 465 434 435 95 10 45(ASN) 21. 466 435 436 95 10 45(ASN) 21. 467 436 437 94 10 26(TYR) 36. 468 437 94 10 26(TYR) 36. 470 439 439 94 7 50(THR) 7.6 471 440 440 95 6 64(LYS) 8.4 472 441 441 95 7 53(SER) 13. 473 442 442 1 95 7 53(SER) 13. 474 443 443 95 7 53(SER) 12. 475 444 444 995 7 39(ARG) 17. 475 444 445 995 8 42(SER) 12. 475 446 445 995 8 42(SER) 18. 477 446 445 995 8 42(SER) 18. 478 477 446 445 995 8 42(SER) 18. 478 478 445 445 995 8 42(SER) 18. 478 478 446 446 995 10 44(PRO) 22. 478 478 446 446 446 995 10 44(PRO) 22. 478 478 478 478 478 478 478 478 478 478 | 460 429 4 | 27 28 29 30 | | 93 1 | 26 (MET) | 25. |
| 467 436 437 95 12 38 (RIS) 30. 468 437 94 10 26 (TYR) 36. 469 438 438 63 6 50 (THR) 16. 470 439 439 94 7 43 (GLN) 17.6 471 440 440 90 6 64 (LYS) 8.4 472 441 441 95 7 53 (SER) 13. 474 443 443 95 8 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 462 431 4 463 432 4 464 433 4 465 434 4 | 3 34 35 | | 94 95 95 | 42 (ALA) 81 (LEU) 43 (PRO) | 13. 13. 5.9 15. |
| 472 441 441 95 7 53(SER) 13. 473 442 442 94 1 16. 474 443 443 95 7 64(SER) 12. 475 444 444 95 7 39(ARG) 17. 476 445 445 95 8 42(SER) 18. 477 446 446 95 10 44(PRO) 22. 478 63 3 59(GEY) 34. | 470 439 43 | 8 9 | | 94 10 53 6 94 7 90 6 | 38 (HIS) 26 (TYR) 50 (THR) 43 (GLN) 64 (LYS) | 30. 36. 7.6 15. |
| 475 446 446 95 8 42(SER) 17. 477 445 445 95 10 42(SER) 18. 478 466 446 95 10 44(PRO) 22. 478 478 489 489 3 59(GEY) 3.4 | 473 442 44 474 443 44 | 1 2 3 | 9 | 5 7 14 9 | 53 (SER) 52 (ILE) 1 (ILE) 64 (SER) | 13. 16. |
| | 476 445 44 477 446 44 478 | 4 5 6 | 9 9 6 | 5 8 5 10 6 3 | 42 (SER) | 18. 22. 3.4 |

The same of the